

1.

The screenshot shows a database query interface with a 'Query Builder' tab and a 'Query Result' tab. The SQL query entered is `select * from auto;`. The results are displayed in a table with 12 columns: SYMBOLING, NORMALIZED_LOSSES, MAKE, FUEL_TYPE, ASPIRATION, NUM_OF_DOORS, BODY_STYLE, DRIVE_WHEELS, ENGINE_LOCATION, WHEEL_BASE, and LENGTH. The table contains 19 rows of data, showing details for various car models from manufacturers like Alfa Romeo, Audi, BMW, and Chevrolet.













	SYMBOLING	NORMALIZED_LOSSES	MAKE	FUEL_TYPE	ASPIRATION	NUM_OF_DOORS	BODY_STYLE	DRIVE_WHEELS	ENGINE_LOCATION	WHEEL_BASE	LENGTH
1	3	0	alfa-romero	gas	std	two	convertible	rwd	front	88.6	168.8
2	3	0	alfa-romero	gas	std	two	convertible	rwd	front	88.6	168.8
3	1	0	alfa-romero	gas	std	two	hatchback	rwd	front	94.5	171.2
4	2	164	audi	gas	std	four	sedan	fwd	front	99.8	176.6
5	2	164	audi	gas	std	four	sedan	4wd	front	99.4	176.6
6	2	0	audi	gas	std	two	sedan	fwd	front	99.8	177.3
7	1	158	audi	gas	std	four	sedan	fwd	front	105.8	192.7
8	1	0	audi	gas	std	four	wagon	fwd	front	105.8	192.7
9	1	158	audi	gas	turbo	four	sedan	fwd	front	105.8	192.7
10	2	192	bmw	gas	std	two	sedan	rwd	front	101.2	176.8
11	0	192	bmw	gas	std	four	sedan	rwd	front	101.2	176.8
12	0	188	bmw	gas	std	two	sedan	rwd	front	101.2	176.8
13	0	188	bmw	gas	std	four	sedan	rwd	front	101.2	176.8
14	1	0	bmw	gas	std	four	sedan	rwd	front	103.5	189
15	0	0	bmw	gas	std	four	sedan	rwd	front	103.5	189
16	0	0	bmw	gas	std	two	sedan	rwd	front	103.5	193.8
17	0	0	bmw	gas	std	four	sedan	rwd	front	110	197
18	2	121	chevrolet	gas	std	two	hatchback	fwd	front	88.4	141.1
19	1	98	chevrolet	gas	std	two	hatchback	fwd	front	94.5	155.9

Conclusion:

- The query results in the total of 195 rows and 26 columns from an automobile dataset.
- The dataset includes the details about manufacturing, designing and maintenance of different makers of cars.
- It also includes prices ranging from highest to lowest based on the brand.

2.

SQL Worksheet | History















Worksheet | Query Builder

```
select * from auto;

select median(highway_mpg), drive_wheels from auto group by drive_wheels;
```

Query Result x



SQL | All Rows Fetched: 3 in 0.011 seconds

	MEDIAN(HIGHWAY_MPG)	DRIVE_WHEELS
1	29	4wd
2	34	fwd
3	25	rwd

conclusion:

The query results the median highway mpg of car for how much distance a vehicle will travel in miles for a gallon of fuel .

- Median of highway mpg for fwd drive wheels is 34
- Median of highway mpg for 4wd drive wheels is 29
- Median of highway mpg for fwd drive wheels is 25

3.

Worksheet Query Builder

```
select count(*), fuel_type, aspiration from auto group by fuel_type, aspiration;
```

Query Result x

All Rows Fetched: 4 in 0.003 seconds

	COUNT(*)	FUEL_TYPE	ASPIRATION
1	152	gas	std
2	23	gas	turbo
3	13	diesel	turbo
4	7	diesel	std

conclusion:

The query results in total number of fule types and Aspirations.

- Gas fuel type consists std and turbo aspirations with total of 152 std aspirations and 23 turbo aspirations.
- While Diesel fuel type consists std and turbo aspirations with total of 7 std aspirations and 13 turbo aspirations.

4.

The screenshot shows an SQL Worksheet application. The top bar includes 'SQL Worksheet' and 'History'. Below is a toolbar with various icons. The main area is divided into 'Worksheet' and 'Query Builder' tabs. The 'Worksheet' tab contains the following SQL query:

```
select sum(curbs_weight),body_style from auto where length >
(select avg(length)from auto) group by body_style;
```

Below the query editor is a 'Query Result' tab showing the results of the query. The status bar indicates 'All Rows Fetched: 5 in 0.004 seconds'. The results are displayed in a table with two columns: 'SUM(CURB_WEIGHT)' and 'BODY_STYLE'.

	SUM(CURB_WEIGHT)	BODY_STYLE
1	37546	hatchback
2	14965	hardtop
3	160045	sedan
4	6660	convertible
5	43447	wagon

conclusions:

The query results in sum of curb weight of each body style of cars where the length of the car is greater than average length of the cars.

- The length of the car is being compared with average length of all the cars where sum of the length of the cars is 33980 and average of the cars is 174.
- Sum of the height curb weight is 160045 and lowest curb weight is 6660.

5.

Worksheet Query Builder		
<pre>select round(avg(highway_mpg)) as Highest_HWmpg, make, compression_ratio from auto where compression_ratio > 9 group by make, compression_ratio order by Highest_HWmpg desc;</pre>		
Query Result x		
All Rows Fetched: 16 in 0.005 seconds		
HIGHEST_HWMPG	MAKE	COMPRESSION_RATIO
1	50 nissan	22
2	48 honda	10
3	46 chevrolet	10
4	43 volkswagen	23
5	42 mazda	23
6	39 toyota	23
7	39 mazda	22
8	35 subaru	10
9	32 nissan	10

conclusion:

The query results in the average of highway mpg of the "make" with the compression ratio greater than 9.

- Nissan has the highest average highway mpg among the other makes with 50 highway mpg.
- Whereasj Jaguar has the lowest average highway mpg with 17 highway mpg.
- Mazda, toyota, volkswagen, volvo have the top compression ratio with 23.

6. Error in question no. 6

7.




Worksheet Query Builder	
<pre>select round(avg(price)) as AvgPrice, make from auto group by make order by AvgPrice desc ;</pre>	
Query Result x	
  	
AvgPrice	MAKE
1	34600 jaguar
2	33647 mercedes-benz
3	31401 porsche
4	26119 bmw
5	18063 volvo
6	17859 audi
7	16503 mercury
8	15498 alfa-romero
9	15489 peugot
10	15223 saab
11	10416 nissan
12	10078 volkswagen
13	9925 mazda
14	9886 toyota
15	9240 mitsubishi
16	8917 isuzu
17	8541 subaru
18	8185 honda

conclusion:

The query results in the average of prices of cars for each 'make'.

- Jaguar make has the highest average price with 34600.
- chevrolet make has the lowest average price with 6007.

8.

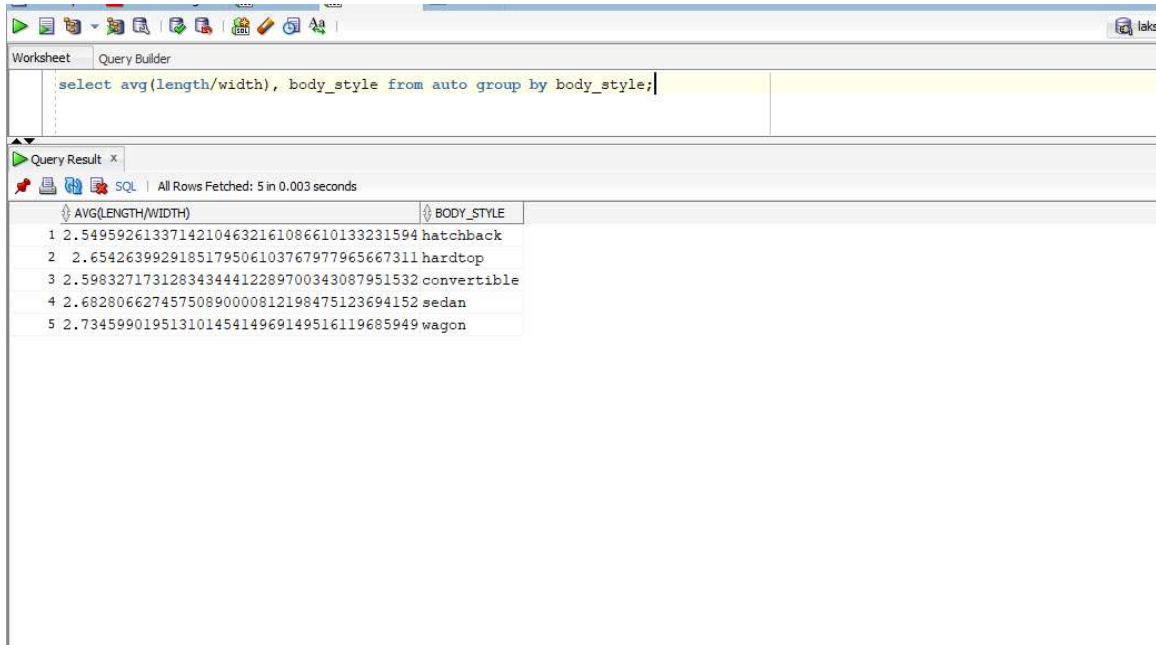
Worksheet Query Builder	
<pre>select count(*) from auto where city_mpg > (select percentile_cont(0.90) within group(order by city_mpg) from auto);</pre>	
Query Result x	
  	
COUNT(*)	
1	19

conclusion:

The query results in city mpg of cars with greater than 90th percentile city mpg.

- The 90 th city mpg of cars is 31 percent
- 19 cars have city mpg geater than 90th percentile city mpg

9.



The screenshot shows a SQL query builder window with a query: `select avg(length/width), body_style from auto group by body_style;`. Below the query, the 'Query Result' tab is active, displaying a table with 5 rows. The table has two columns: 'AVG(LENGTH/WIDTH)' and 'BODY_STYLE'. The rows are ordered by the average length to width ratio in descending order.

	AVG(LENGTH/WIDTH)	BODY_STYLE
1	2.54959261337142104632161086610133231594	hatchback
2	2.6542639929185179506103767977965667311	hardtop
3	2.59832717312834344412289700343087951532	convertible
4	2.68280662745750890000812198475123694152	sedan
5	2.73459901951310145414969149516119685949	wagon

conclusion:

The query results in the average length to width ratio of the cars for each body style.

- Wagon body style car has the highest average length to width ratio with 2.7
- Hatchback body style car has the lowest average length to width ratio with 2.54

10.

Worksheet	Query Builder				
<pre>select count(*) from auto where abs(price - (select avg(price) from auto))<= (select stddev_pop(price) from auto);</pre>					
Query Result x All Rows Fetched: 1 in 0.004 seconds					
<table> <thead> <tr> <th></th><th>COUNT(*)</th></tr> </thead> <tbody> <tr> <td>1</td><td>169</td></tr> </tbody> </table>			COUNT(*)	1	169
	COUNT(*)				
1	169				

conclusion:

The query results in the number of cars within one standard deviation of the average price.

- The number of cars within one standard deviation is 169 .
- Here, 68% of the cars will fall under one standard deviation of the average price.

11.

Worksheet	Query Builder				
<pre>select count(*) from auto where price > (select percentile_cont(0.75) within group(order by price) from auto);</pre>					
Query Result x All Rows Fetched: 1 in 0.008 seconds					
<table> <thead> <tr> <th></th><th>COUNT(*)</th></tr> </thead> <tbody> <tr> <td>1</td><td>49</td></tr> </tbody> </table>			COUNT(*)	1	49
	COUNT(*)				
1	49				

conclusion:

The query results in the price of the cars greater than the 75% of the price of the car.

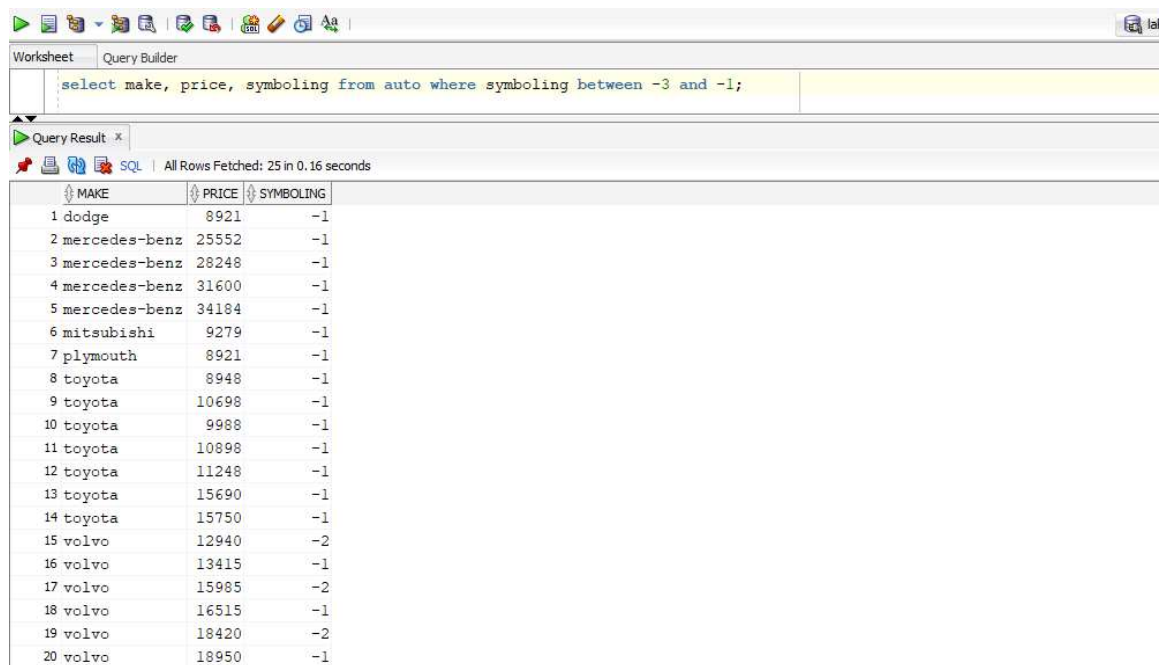
- Out of 195 cars, 49 cars have the price above 75% of the price of the cars.

- The top 3 highest prices of the cars are

1. 45400 mercedes-benz
2. 41315 bmw
3. 40960 mercedes-benz

12.

Safest:



The screenshot shows a Query Builder window with a SQL query: `select make, price, symboling from auto where symboling between -3 and -1;`. Below the query, the results are displayed in a table with 20 rows. The columns are MAKE, PRICE, and SYMBOLING. The results show cars from various manufacturers, with prices ranging from 8921 to 34184 and symboling values between -1 and -2.

	MAKE	PRICE	SYMBOLING
1	dodge	8921	-1
2	mercedes-benz	25552	-1
3	mercedes-benz	28248	-1
4	mercedes-benz	31600	-1
5	mercedes-benz	34184	-1
6	mitsubishi	9279	-1
7	plymouth	8921	-1
8	toyota	8948	-1
9	toyota	10698	-1
10	toyota	9988	-1
11	toyota	10898	-1
12	toyota	11248	-1
13	toyota	15690	-1
14	toyota	15750	-1
15	volvo	12940	-2
16	volvo	13415	-1
17	volvo	15985	-2
18	volvo	16515	-1
19	volvo	18420	-2
20	volvo	18950	-1

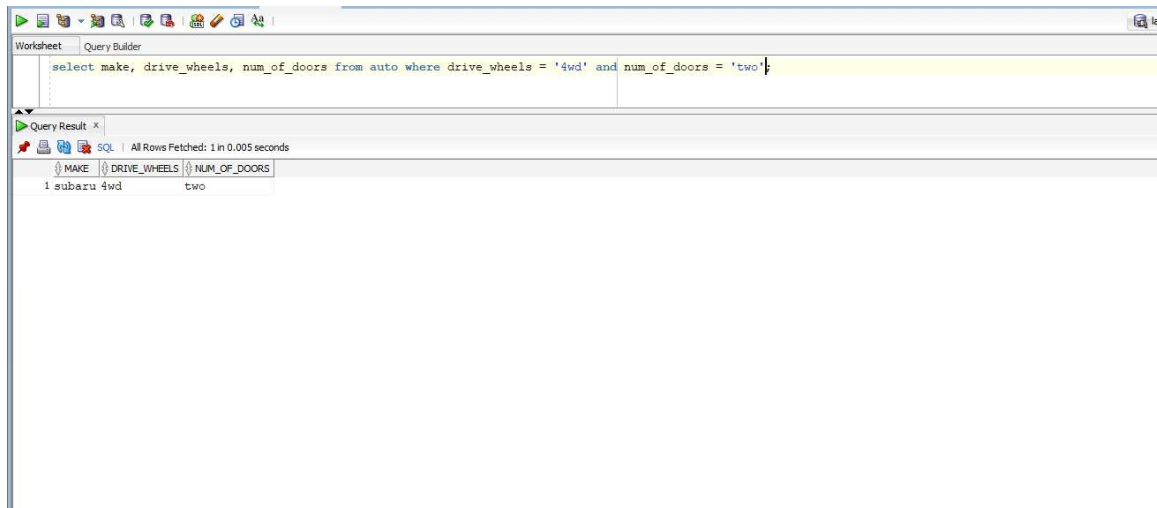
conclusion:

The query results in the maker and price range of the vehicles that are safest.

- There are total 6 companies that are providing the safest cars among all the companies.
- Top five price range of cars are:
 1. mercedes-benz 34184
 2. mercedes-benz 31600

3. mercedes-benz 28248
4. mercedes-benz 25552
5. volvo 22625

13.



conclusion:

The query results in the maker of 4wd cars that have only 2 doors.

- Subaru is maker of 4wd cars that have only 2 doors.

14.

- There are totally 96 gas type cars having only 4 doors.